FACTORS AFFECTING THE BEHAVIORAL ADAPTATION OF CHILDREN FOLLOWING THE DIAGNOSIS OF CANCER IN A BROTHER OR SISTER: AN EXAMINATION OF THE CHILD AND SIBLING ACCESS CHARACTERISTICS

Evangeline S. Tolley, Ph. D.

Program and Research Consultant, Private Practice
Darien, Ct.

Statement Of The Problem

A problem of serious concern for health care professionals who work with families of pediatric cancer patients is how the brothers and sisters of the young patient cope with the cancer experience. With survival rates improving and nearly 50 to 60 percent of all patients off treatment in approximately three years (Lewis & Le Barbara, 1973), more and more families must learn to cope with living with childhood cancer.

Stress reactions to cancer are unavoidable for patients and their families. However, one's psychologic response (Hersh, 1982) is mediated by a variety of factors. The ability to locate the cancer, where it is located, or the inability to locate the cancer elicit greater or lesser fear in those who are confronted with the disease. The visibility of the disease to the patient and family members, the level and chronicity of discomfort resulting from the disease, changes in physical appearance or loss of functioning, noxious side effects resulting from treatment influence the adaptive response of everyone involved in the cancer experience. In addition, the patient's age has a substantial impact on how the patient and other members of the family cope with the family crisis.

Review Of The Literature And Identification Of Pertinent Variables

Important participants in the childhood cancer experience that have been seriously overlooked in the psychosocial literature are the brothers and sisters of the child with chronic, life-threatening disease. Sibling research in general is a very new field of investigation (Bank & Kahn, 1982). With respect to the siblings of young cancer patients, controlled studies that have focused primarily on the behavioral adaptation of these children to the cancer experience have been almost non-existent (Lavigne & Ryan, 1979).

The behavioral adaptation of the siblings of pediatric cancer patients has emerged as a very new area of interest

for helping professionals in the health care field. The literature, thus far, has been comprised primarily of clinical and interview data. The results of the few controlled studies which have addressed this problem have been compromised by methodological inadequacies and have rendered inconsistent results. Notwithstanding the limited literature in this area, clinicians generally concur that a substantial number of the siblings of pediatric cancer patients experience serious behavioral problems following the diagnosis. And, despite the lack of empirical rigor, the present body of knowledge has been helpful in identifying potentially pertinent variables which are likely to influence the adaptive response of the siblings of young cancer patients.

With considerations for the present state of the literature in the area, both qualitative and quantitative studies have been incorporated into the review of the literature. Additionally, because siblings of pediatric cancer patients may share experiences in common with the siblings of children with other chronic illness, studies which have examined sibling adaptation to a variety of chronic health conditions have also been included.

Reports of clinical observations and interview studies support the notion that children respond emotionally and behaviorally to a sibling's illness (Lavigne & Ryan, 1979). And most clinicians suggest that the siblings of chronically ill children should be considered at high risk for special behavioral and emotional problems (Lavigne, 1980). These studies, by far the most plentiful in the literature, have been helpful in identifying problems that the siblings of chronically ill children are likely to experience and in identifying variables that may influence their adaptations to the experience. However, the hypothetical inferences that have been made as a result of these studies have only partially been tested in controlled investigations.

Thus far, the clinical studies and the interview data indicate that adaptive problems for the healthy siblings may be manifested affectively and behaviorally. And, although their findings that the impact of chronic illness on the response of siblings who were healthy prior to the diagnosis is more likely to be maladaptive (Taylor, 1980), some results suggest that the illness appears to have little or no effect on the behavioral adaptation of the other children in the family (Pinyard, 1983; Steiner, 1984), and in some situations, appears to have a positive impact (Taylor, 1980). With respect to sibling response to a pediatric cancer diagnosis, the results appear to be consistent with those for chronic groups in general, primarily maladaptive for most siblings (Binger, 1969; Iles, 1979; Kaplan, Grobstein &

Smith, 1976; Kramer, 1984; Koch, 1985), with a few children appearing relatively unaffected by their sibling's illness (Googan, Koocher, Foster & O'Malley, 1977) and some children being positively affected by the experience (Iles, 1979; Kramer, 1984; Koch, 1985).

Although the qualitative data strongly suggests that the siblings of chronically ill children should be considered at risk for behavioral disturbance, the results of the controlled investigations have been somewhat inconsistent. The affects of birth order (Gath, 1972; Breslau, Weitzman & Messenger, 1981; Breslau, 1982), relative age spacing (Ferrari, 1984), sex of the children (Tew & Laurence, 1973; Lavigne & Ryan, 1979), post diagnosis sib time (Ferrari, 1984), and type and extent of disability have also been considered with respect to the behavioral adaptation of the other children in the family. The data, however, on these variables has also been varied. Additionally, methodological weaknesses have hindered this research area, "ranging from obvious biases toward the measurement of negative influences to a gross lack of effort to provide convergent measures" (Ferrari, 1984). Finally, studies have, for the most part, relied on parental reports of child behavior despite the fact that there is evidence to suggest that parental reports may be subject to perceptual distortions (La Pouse & Monk, 1974; Piers, 1972). Despite inconsistencies, however, the majority of the empirical evidence supports the notion that the presence of a chronically ill child in the family is likely to be associated with increased behavioral problems for the other children in the family following the diagnosis.

In addition, these studies have identified a number of categories of variables that may affect the adaptation of the other children in the family following the identification of childhood chronic illness: (1) Characteristics of the Child (Sibling); (2) Characteristics of the Patient; (3) Characteristics of Sibling Access; (4) Characteristics of the Sibling's Involvement in Illness-Related Activities; (5) Characteristics of the Parents; (6) Characteristics of the Family. Within each of these categories potentially pertinent variables have also been identified, some of which, have been examined in controlled investigations.

There have been only a few controlled studies that have examined sibling response to pediatric cancer (Cairns, Clark, Smith & Lansky, 1979; Lavigne & Ryan, 1979; Kaplan, Grobstein & Smith, 1976; Spinetta, 1981). Although the investigations have been wrought with methodological problems, and the findings, thus far, have been somewhat inconsistent, the indications are that although some children do not seem to be

adversely affected, others are seriously affected by their sibling's illness.

The cancer experience for the siblings of the young cancer patient is a complex one in need of further investigation. The purpose of this study is to further our understanding of how the brothers and sisters of pediatric cancer patients are likely to be affected by their sibling's illness.

The Research Questions

A review of the literature has revealed numerous variables which are considered to impact on the child's response to the chronic illness of a brother or a sister. The large number identified are reflective of the complexity of this experience for the children involved. However, inclusion of all potentially influential variables into one study would be an overwhelming endeavour. Consequently, this study was designed to address the following research questions.

1. Do siblings of pediatric cancer patients exhibit an increased number of behavior problems as reported by parents and teachers?
2. Is the incidence of reported behavior problems associated with such variables as the child's age or the amount of time that has lapsed since the diagnosis?
3. Is the incidence of reported behavior problems associated with the age spacing of the child to his or her ill brother or sister, the sexes of the children, and their relative birth order?

Methodology

The Sample

Participants for the study were identified through patient rolls supplied by physicians from the Surgery Branch of the National Institute of Health, Bethesda, Maryland and the Pediatric Hematology--Oncology Unit of the Medical College of Virginia, Virginia Commonwealth University, Richmond, Virgina. A list of 132 patients (79 patients-- MCV/VCU; 53 patients--NIH) was provided for the study. The parents of 87 patients were contacted by the investigator by telephone. Fifty-one parents reported that they had children who fit the study criteria. Thirty-eight parents gave verbal consent to participate in the study. These parents were mailed formal consent forms and authorization for release of confidential information forms. Thirty-two signed forms were returned to the investigator. Subsequently, 5 parents withdrew from the study.

Subjects

Twenty-seven children were subjects for the study. The children were siblings of pediatric cancer patients who had been treated at the Surgery Branch of the National Institute of Health, Bethesda, Maryland (15 patients) and the Pediatric Hematology-Oncology Unit of the Medical College of Virginia/Virginia Commonwealth University, Richmond, Virginia (12 patients) no more than six years prior to the inception of the study. The age range of the patients at the time of the diagnosis was 12-209 months. Age range for patients at the time of the data collection was 31-264 months. Eighteen patients had been diagnosed with extremity sarcoma, 6 patients had been diagnosed with leukemia, and 3 had been diagnosed with some other form of cancer. All patients were living at the time of the data collection.

In all families, the subjects were living in the same household at the time the cancer diagnosis was made and had remained so at the time of the data collection. No other member was suffering from any chronic disease at the time of the data collection. No member of the family had a known history of serious mental, emotional, physical or behavioral problems prior to the cancer diagnosis. Twenty-two parents were married at the time of the cancer diagnosis. Five parents were divorced at that time. Marital status for 4 parents had changed from married to separated or divorced at the time of the data collection. Family size ranged from 2 to 7 children. The children's parents provided informed consent and the children's mothers provided information on the patient, the subject and the family.

The age range for subjects was 16-172 months at the time of the cancer diagnosis. The age range for subjects at the time of the data collection was 76-199 months. Ten subjects were female and 17 were male. There were 19 white subjects and 8 were non-white. The time that had lapsed for the subject since the diagnosis (Sib-time-post diagnosis) was 6-102 months.

With respect to Relative Sex of the subject to the patient, 14 subjects were of the same sex, 13 were of the opposite sex. With respect to Relative Birth Order, (whether the subject was older or the same age or younger than the patient), 8 subjects were older, 19 subjects were the same age or younger. Age Spacing between the patient and the studied child ranged from 0-158 months.

The study attempted to predict children's behavior following the diagnosis of cancer in a brother or sister.

Additionally, an exploration of the relationship among several predictor variables was attempted.

The following measures were used as criterion variables for children's behavior following the cancer diagnosis:

(1) Child Behavior Checklist and Revised Child Behavior Profile: Parent Form (CBCL and CBP) (Achenbach & Edelbrock, 1983)
- (a) Girls - Aged 6-11
- (b) Boys - Aged 6-11
- (c) Girls - Aged 12-16
- (d) Boys - Aged 12-16

(2) Teacher Version of the Child Behavior Profile and Teacher Report Form (TRF) (Achenbach & Edelbrock, 1986)
- (a) Girls - Aged 6-11
- (b) Boys - Aged 6-11
- (c) Girls - Aged 12-16
- (d) Boys - Aged 12-16

The following list of measures taken from the Family Information Form (FIF) served as predictors of children's behavior following the cancer diagnosis:

Child Characteristics (Model I)
(1) Age
(2) Sib-time post diagnosis

Sibling Access Charcteristics (Model II)
(1) Age Spacing
(2) Relative Sex
(3) Relative Birth Order

Parents provided informed consent. Only one child per family was selected for the study. The studied child's mother completed the FIF and the CBCL on the studied child. The TRF was completed by the teacher of the studied child.

Scores for siblings of pediatric cancer patients on the CBP and the TRF were compared for each category of Sex x Age to the normative data (T-scores) for these instruments utilizing Analyses of Variance. In order to examine the relationship between Child and Sibling Access Characteristics (predictors) on children's behavior following a diagnosis of pediatric cancer (criteria), multivariate analyses were performed.

Forced entry regression analyses were conducted for all subjects (n=27) utilizing Model I = Child Characteristics (two predicators), Model II = Sibling access characteristics (three predictors), and measures of parent and teacher reports of children's behavior (two criteria).

Results

The CBCL

Comparison of normalized T-scores derived from overall behavior problem scores for the Revised Child Behavior Profile were made for each Sex x Age Category in the study group and the normative data provided by the instrument authors using Analyses of Variance. No significant differences were found for Category 1 (Girls Age 6-11), Category 2 (Boys Aged 6-11), Category 3 (Girls Aged 12-16), or Category 4 (Boys Aged (12-16). For boys (Category 2 and 4) neither mean T-Scores nor any of the sub-scale scores exceeded normal limits. For girls in Category 1, however, the mean T-score exceeded normal limits with sub-scale scores for Scale I (Depressed) and III (Somatic complaints) entering the clinical range. For girls in Category 3 the mean T-score also exceeded normal limits with the subscale score for Scale II (Somatic complaints) entering the clinical range.

Multiple regression procedures were used to examine two models of prediction for each subject's overall behavior problem score on the CBCL. All four Sex x Age Categories were combined (n=27). A forced entry procedure was used.

Model I: Child characteristics did not prove to be significant in predicting the subject's overall behavior problem score on the CBCL. The total variance in overall behavior problem scores for the CBCL explained was .130 (See Table 1).

Table 1

Regression Coefficients* and Explained Variance for Predictors of Overall Behavior Problem Scores--Child Behavior Checklist

Model I: Child Characteristics		
Predictor Variables	Increased Scores	Decreased Scores
Child's present age		ns
Sib-time post diagnosis	ns	
Explained Variance (R^2)	.130	

*All coefficients presented are statistically significant at .05. ns = not significant. Forced entry procedure.

The best model for predicting the subject's overall behavior problem score on the CBCL was Model II: Sibling Access Characteristics. Total variance in overall behavior

problem scores for the CBCL explained was .300. The variable making the greatest contribution to the overall explained variance was Relative Birth Order with younger relative birth order being associated with decreased overall behavior problem scores on the CBCL. The effects of Relative Sex to the patient, although not significant at the .05 level, revealed that being the same sex as the patient was associated with increased overall behavior problem scores. Age spacing, also not significant at the .05, was associated with decreased overall behavior problem scores. (See Table 2).

Table 2

Regression Coefficients* and Explained Variance for Predictors of Overall Behavior Problem Scores - Child Behavior Checklist

Model II: Sibling Access Characteristics		
Predcitor Variables	Increased Scores	Decreased Scores
Age spacing in months		ns
Relative birth order to patient: younger		.531
Relative sex to patient: same sex	ns	
Explained Variance (R^2)	.300	

*All coefficients presented are statistically significant at .05. ns = not significant. Forced entry procedure.

The TRF

Comparisons of normalized T-scores derived from overall behavior problem scores for the Teacher Reported Behavior Problem Profile were made for each Sex x Age Category in the study group and the normative data using Analyses of Variance. No significant difference was found for Category 1, Category 2, Category 3, or Category 4. Additionally, none of the mean T-scores for any of the four categories exceeded normal limits nor did nay of the sub-scale scores in any of the Age x Sex categories.

Multiple regression procedures were used to examine two models of prediction for each subject's overall behavior problem score on the TRF. All four Sex x Age Categories were combined (n=27). A forced entry procedure was used.

Neither Model 1: Child Characteristics nor Model II: Sibling Access Characteristics proved to be significant in

predicting the subject's overall behavior problem score on the TRF. The total variance in overall behavior problem scores on the TRF explained for Model I was .069. (See Table 3).

Table 3

Regression Coefficients*and Explained Variance for Predictors of Overall Behavior Problem Scores - Teacher Report Form

Model I: Child Characteristics

Predictor Variables	Increased Scores	Decreased Scores
Child's present age	ns	
Sib-time post diagnosis		ns
Explained Variance (R^2)	.069	

*All coefficients presented are statistically significant at .05. ns= not significant. Forced entry procedure.

The total variance in overall behavior problem scores on the TRF for Model II explained was .178. (See Table 4).

Table 4

Regression Coefficients*and Explained Variance for Predictors of Overall Behavior Problem Scores - Teacher Report Form

Model II: Sibling Access Characteristics

Predictor Variables	Increased Scores	Decreased Scores
Age spacing in months	ns	
Relative Birth Order to patient--younger	ns	
Relative Sex to patient--Same Sex	ns	
Explained Variance (R^2)	.178	

*All coefficients presented are statistically significant at .05. ns= not significant. Forced entry procedure.

Discussion

The results of the study fail to support the view that the siblings of pediatric cancer patients are, uniformly, at greater risk for the development of behavior problems following a diagnosis of cancer. Based on measures of the incidence of behavior problems from the perspective of the child's mother and from the perspective of the child's school teacher, no Sex x Age Category differed significantly from normative data on overall behavior problem scores. However, examination of scores for each Sex x Age Category revealed that some children (female siblings in both age categories) presented total problem behavior scores above the normal range and scores on certain sub-scales that entered the clinical range, as viewed from the mother's perspective.

These results, although based on a small, select sample, raise important questions for clinicians and parents. Do the females in this study exhibit a higher incidence of behavior problems because it is more socially permissable for them to be emotionally expressive in our society? Have the male siblings been discouraged or prohibited from letting their feelings be known, only to have them emerge much later in the form of adult depression, substance abuse, or problems sustaining relationships? Or have male children been afforded the opportunity, through the norms of socially acceptable behavior, to work out their feelings through vigorous and aggressive play?

Teacher reported behavior problems did not exceed normal limits on overall behavior problem scores or any of the sub-scale scores. This could suggest that the incidence of the child's behavior problems may vary depending on the child's environment, or may be judged differentially depending upon the observer.

The data indicate that the variables of the child's present age and the amount of time that had lapsed since the diagnosis bore little relationship in predicting an increase in overall behavior problem scores as reported by the children's mothers and their teachers. The results do suggest, however, a relationship between sibling access characteristics and increased behavior problem scores as reported by the children's mothers. Higher overall behavior problem scores were associated with children who were closer in age, not of the same age or younger (older) than the patient, and who were of the same relative sex with relative birth order being the strongest predictor. Although any conclusions that might be drawn from these results would be highly speculative at this point, consideration might be

given to issues pertaining to children's feelings of sibling ambivalence (Bank & Kahn, 1982; Neubauer, 1983) and how this may complicate the children's adaptation to a diagnosis of pediatric cancer in a brother or sister.

Implications of Social Work Practice

Social workers in the health care setting must be aware that when one member of a family becomes seriously ill, all members are affected by the medical crisis. The complexity of the interplay of the many personal and social factors makes it difficult, however, to determine exactly which members will be the most seriously, adversely affected by the experience.

The meaning and significance that children assign to life events is directly affected by the nature of their relationships with other family members. The nature of these relationships is also subject to change as the child matures. Social workers must be knowledgeable about the nature and significance of human relationships among family members in order to understand the impact of serious disease in one member on others in the family and to understand how, and to what degree, the illness will be perceived as a significant loss.

It becomes crucial that all members be included in the social work intervention plan, either directly or indirectly. Limited time and resources and large geographic distances between the family and the treatment facility may make face to face contact between social workers and all family members difficult or impossible. However, members with whom there is regular contact may need to be educated and/or sensitized to the needs of those who are left at home. Additionally, hospital social workers may need to act as advocates for family members whose needs often go unrecognized, or may need to perform as liaison between the client, whether it be the patient or other family member, and services and/or resources in their local community. This may be particularly the case for the brothers and sisters of young cancer patients.

It is only in the very recent past that the medical staff has begun to recognize that the siblings of pediatric cancer patients are important participants in the illness experience. And as we learn more about how these children are affected by this experience, through research and practice experience, that knowledge can be utilized to create necessary and appropriate programs and services to meet the needs of all members of the patient's family.

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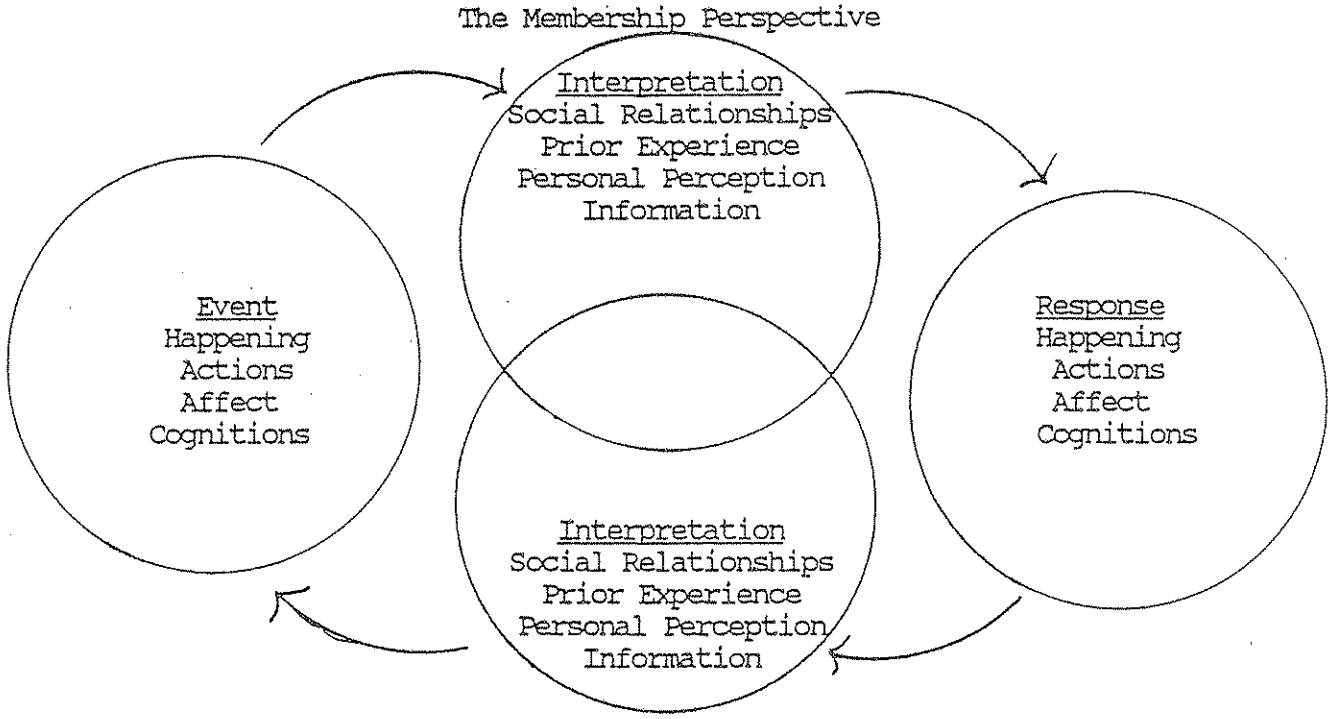
The Membership Perspective



Members act and respond to life events based on what those events mean to them. The process of acting and/or responding is continuous, cumulative and unidirectional. No adaptation to present life events is experienced without some tie to one's past.

Response Outcome for Siblings of Chronically Ill Children: Negative Impact

Affective

Guilt, anger, resentment
isolation, loneliness,
sadness, deprivation, low self-worth

Anxiety, fear, confusion, Depression,
frustration, worry, embarrassment

Behavioral

Social withdrawal
Deterioration in school performance
School phobia
Death Phobia
Regressive Behavior
Denial

Increased somatic complaints
Accident-prone behavior
Acting-out
Hysterical reactions
Overly responsible behavior

Response Outcome for Siblings of Chronically Ill Children: Positive Impact

Affective

Enhanced self-worth

Increased empathy

Behavioral

Increase in responsible behavior
Improvement in school performance

Improvement in family
relationships
Increased communication with
family members

Variables Affecting Sibling Adaptation Following the Identification of Pediatric Chronic Illness

Characteristics of Child (Sibling)

Age
Sex
Cognitive developmental level at time of diagnosis
Ordinal position in sibship
Sibling time post diagnosis

Characteristics of Patient

Age
Sex
Cognitive developmental level
Ordinal position in sibship
Medical diagnosis/prognosis
Present diesease status
Age at time of diagnosis
Visibility/severity of handicap resulting from treatment

Characteristics of Parents

Physical/mental health of mother
Marital satisfaction

Characteristics of Sibling Access

Age spacing to the patient
Relative birth order to patient (sibling older or younger age than patient)
Relative sex to the patient (sibling of same or opposite sex as patient)

Characteristics of Sibling Involvement in Illness-Related Activities

Level of knowledge about the patient's condition
Participation in formal support group
Participation in care of the patient

Characteristics of the Family

Family size
Family communication levels
Socioeconomic status
Presence of other family problems

Summary of Patient Characteristics

	Range in months
Patient's age at time of diagnosis (in months)	12 - 209
Patient's present age (in months)	31 - 264

	Totals
Patient's sex	
Female	12
Male	15
Cancer Diagnosis	
Extremity Cancer	18
Leukemia	6
Other	3
Hospital of Data Collection	
National Institute of Health Bethesda, Maryland	15
Medical College of Virginia/Virginia Commonwealth University Richmond, Virginia	12

Summary of Family Demographics

	Totals
Marital status of parents at time of diagnosis	
Married	22
Not Married	5
Marital status of parents post diagnosis	
Married	18
Not Married	9
General occupational category of head of household	
Professional	4
Managerial	6
Sales	2
Skilled labor	9
Semi- and unskilled labor	6
Number of children	
2	11
3	5
4	6
5	2
6	2
7	1

Summary of Characteristics of Studied Children

Sex	Ages 6-11	Ages 12-16	Total
Females	6	4	10
Males	9	8	17
Race			
White	19		
Non-White	8		

	Range in Months
Present age (in months)	76 - 199
Age at time of diagnosis (in months)	16 - 172
Sibling-time lapsed since the diagnosis (in months)	6 - 10

Summary of Sibling Access Characteristics

Relative sex of sibling to patient	Totals
Same Sex - Total	14
Same Sex - Female	5
Same Sex - Male	9
Opposite Sex - Total	13
Opposite Sex - Female	5
Opposite Sex - Male	8

Relative birth order of sibling to patient	
Same Age or Younger - Total	19
Same Age or Younger - Female	5
Same Age or Younger - Male	14
Older - Total	8
Older - Females	5
Older - Males	3

	Range
Age spacing to patient (in months)	0 - 158 months

Scoring Categories of Subjects
Sex X Age

Category 1.

Girls Age 6 - 11
n = 6
22.2 percent of total sample
mean age = 105.00 months
(S.D. = 16.95)
range = 79 - 119 months

Category 2.

Boys Age 6 - 11
n = 9
33.3 percent of total sample
mean age = 109.00 months
(S.D. = 32.72)
range = 76 - 181 months

Category 3.

Girls Age 12 - 16
n = 4
14.8 percent of total sample
mean age = 182.00 months
(S.D. = 12.83)
range = 168 - 199 months

Category 4.

Boys Age 12 - 16
n = 8
29.6 percent of total sample
mean age = 160.00 months
(S.D. = 21.59)
range = 136 - 192 months

Category 1

Revised Child Behavior Profile

Behavior Problems - Girls Aged 6 - 11
(n = 6)

	Mean Scores
Overall Behavior Problem Score	48.33*
T-score	63.67*
Sub-scale Scores	
I Depressed	14.17*
II Social Withdrawal	3.00
III Somatic Complaints	7.67*
IV Schizoid Obsessive	1.00
V Hyperactive	4.33
VI Sex Problems	2.50
VII Delinquent	.50
VIII Aggressive	14.70
IX Cruel	1.17
Other Problems	
Internalizing Score	24.17*
T-score	70.01*
Externalizing Score	20.67
T-score	61.51

* Scores which exceed normal limits according to the instrument author when plotted on the Revised Child Behavior Profile for Sex X Age

It can be seen from the data that mean scores for Girls Aged 6 - 11 did not differ significantly from the normative sample, mean T-scores, however, did exceed normal limits. Sub-scale scores for Scale I and Scale III entered the clinical range.

Category 2

Summary of Problem Scores

Revised Child Behavior Profile

Behavior Problems Boys - Aged 6 - 11
(n = 9)

	Mean Scores
Overall Behavior Problem Score	36.56
T-score	59.11
Sub-scale Scores	
I Schizoid or Anxious	2.11
II Depressed	4.89
III Uncommunicative	4.33
IV Obsessive-Compulsive	2.67
V Somatic Complaints	2.77
VI Social Withdrawal	2.33
VII Hyperactive	4.33
VIII Aggressive	12.44
IX Delinquent	4.33
Other Problems	6.00
Internalizing Score	13.67
T-score	59.00
Externalizing Score	18.22
T-score	60.00

* Scores which exceed normal limits according to the instrument authors when plotted on the Revised Child Behavior Profile for Sex X Age

Results of ANOVAR/not significant

It can be seen from the data that mean scores for Boys Aged 6 - 11 years did not differ significantly from the normative sample. No mean sub-scale scores exceeded normal limits.

Category 3

Summary of Problem Scores

Revised Child Behavior Profile

Behavior Problems - Girls Aged 12 - 16
(n = 4)

	Mean Scores
Overall Behavior Problem Scores	48.50*
T-score	66.75*
Sub-scale scores	
I Anxious Obsessive	11.75
II Somatic Complaints	4.75*
III Schizoid	3.25
IV Depressed Withdrawal	9.75
V Immature Hyperactive	6.25
VI Delinquent	6.25
VII Aggressive	11.75
VIII Cruel	1.75
Other Problems	2.75
Internalizing Score	25.25
T-score	66.00
Externalizing Score	18.25
T-score	60.10

* Scores which exceed normal limits according to the instrument authors when plotted on the Revised Child Behavior Profile for Sex X Age

Results of ANOVAR/ not significant

It can be seen from the data that mean scores for Girls Aged 12 - 16 did not differ significantly from the normative sample. Mean T-scores, however, did exceed normal limits. The sub-scale score for Scale II entered the clinical range.

Category 4

Summary of Problem Score

Revised Child Behavior Profile

Behavior Problems - Boys Aged 12 - 16
(n = 8)

	Mean Scores
Overall Behavior Problem Scores	40.88
T-score	61.13
Sub-scale scores	
I Somatic Complaints	5.25
II Schizoid	2.60
III Uncommunicative	5.75
IV Immature	2.63
V Obsessive-Compulsive	4.00
VI Hostile Withdrawal	4.38
VII Delinquent	2.00
VIII Aggressive	13.25
IX Hyperactive	5.75
Other Problems	5.60
Internalizing Scores	17.63
T-score	64.01
Externalizing Scores	17.88
T-score	62.13

* Scores which exceed normal limits according to the instrument authors when plotted on the Revised Child Behavior Profile for Sex X Age.

Results of ANOVAR/not significant

It can be seen from the data that mean T-scores for Boys Aged 12 - 16 did not differ significantly from the normative sample. Neither mean T-scores nor sub-scale scores exceeded normal limits.

Table 1

Regression Coefficients*and Explained Variance for Predictors of Overall Behavior Problem Scores--Child Behavior Checklist

Model I: Child Characteristics		
Predictor Variables	Increased Scores	Decreased Scores
Child's present age		ns
Sib-time post diagnosis	ns	
Explained Variance (R^2)	.130	

*All coefficients presented are statistically significant at .05. ns = not significant. Forced entry procedure.

Table 2

Regression Coefficients*and Explained Variance for Predictors of Overall Behavior Problem Scores - Child Behavior Checklist

Model II: Sibling Access Characteristics		
Predcitor Variables	Increased Scores	Decreased Scores
Age spacing in months		ns
Relative birth order to patient: younger		.531
Relative sex to patient: same sex	ns	
Explained Variance (R^2)	.300	

*All coefficients presented are statistically significant at .05. ns = not significant. Forced entry procedure.

Category 1

Summary of Problem Scores

Teacher Report Form and Teacher Reported Behavior Problems -

Girls Aged 6 - 11
(n = 6)

		Mean Score
Overall Behavior Problem Score		23.17
T-score		54.33
Sub-scale scores		
I	Anxious	6.00
II	Social Withdrawal	4.17
III	Depressed	4.17
IV	Unpopular	.17
V	Self-Destructive	.67
VI	Inattentive	4.50
VII	Nervous-Overactive	1.00
VIII	Aggressive	1.17
	Other Problems	4.83
Internalizing Score		9.50
T-score		59.10
Externalizing Score		6.33
T-score		53.00

* Scores which exceed normal limits according to the instrument authors when plotted on the Teacher Reported Behavior Problem Profile for Sex X Age.

Results of ANOVAR/not significant

As can be observed from the data, mean T-scores did not differ significantly from the normative data. And no scores exceeded normal limits.

Table 3

Regression Coefficients*and Explained Variance for Predictors of Overall Behavior Problem Scores - Teacher Report Form

Model I: Child Characteristics		
Predictor Variables	Increased Scores	Decreased Scores
Child's present age	ns	
Sib-time post diagnosis		ns
Explained Variance (R^2)	.069	

*All coefficients presented are statistically significant at .05. ns= not significant. Forced entry procedure.

Table 4

Regression Coefficients*and Explained Variance for Predictors of Overall Behavior Problem Scores - Teacher Report Form

Model II: Sibling Access Characteristics		
Predictor Variables	Increased Scores	Decreased Scores
Age spacing in months	ns	
Relative Birth Order to patient--younger	ns	
Relative Sex to patient--Same Sex	ns	
Explained Variance (R^2)	.178	

*All coefficients presented are statistically significant at .05. ns= not significant. Forced entry procedure.

Category 4

Summary of Problem Scores

Teacher Report Form and Teacher Reported Behavior Problems -

Boys Aged 12 - 16
(n = 8)

	Mean Scores
Overall Behavior Problem Score	32.00
T-score	55.25
Sub-scale scores	
I Social Withdrawal	7.13
II Anxious	5.13
III Unpopular	1.50
IV Obsessive-Compulsive	1.63
V Immature	1.88
VI Self-Destructive	5.50
VII Inattentive	10.75
VIII Aggressive	7.25
Other Problems	3.13
Internalizing score	11.25
T-score	59.01
Externalizing score	18.63
T-score	55.02

* Scores which exceed normal limits according to the instrument authors when plotted on the Teacher Reported Behavior Problem Profile for Sex X Age.

Results of ANOVAR/not significant

As can be observed from the data, mean T-scores did not differ significantly from the normative sample. No scores exceeded normal limits.

Category 3

Summary of Problem Scores

Teacher Report Form and Teacher Reported Behavior Problems -

Girls Aged 12 - 16
(n = 4)

	Mean Scores
Overall Behavior Problem Score	25.00
T-score	48.00
Sub-scale scores	
I Anxious	4.25
II Social Withdrawal	6.00
III Depressed	3.00
IV Immature	1.50
V Self-Destructive	.25
VI Inattentive	9.00
VII Unpopular	.75
VIII Delinquent	1.50
IX Aggressive	5.25
Other Problems	2.75
Internalizing score	8.75
T-score	59.21
Externalizing score	10.75
T-score	54.00

* Scores which exceed normal limits according to the instrument authors when plotted on the Teacher Reported Behavior Problem Profile for Sex X Age.

Results of ANOVAR/not significant

As can be observed from the data, mean T-scores did not differ significantly from the normative sample. No scores exceeded normal limits.

Category 2

Summary of Problem Scores

Teacher Report Form and Teacher Reported Behavior Problems -

Boys Aged 6 - 11
(n = 9)

		Mean Score
Overall Behavior Problem Score		46.11
T-score		59.44
Sub-scale scores		
I	Anxious	7.56
II	Social Withdrawal	7.11
III	Unpopular	3.44
IV	Self-Destructive	2.89
V	Obsessive-Compulsive	2.33
VI	Inattentive	11.22
VII	Nervous-Overactive	7.56
VIII	Aggressive	17.33
	Other Problems	3.88
Internalizing score		13.22
T-score		64.00
Externalizing score		46.11
T-score		65.01

* Scores which exceed normal limits according to the instrument authors when plotted on the Teacher Reported Behavior Problem Profile for Sex X Age.

Results of ANOVAR/not significant

As can be observed from the data, mean T-scores did not differ significantly from the normative sample. No scores exceeded normal limits.